## INTERNATIONAL SEARCH REPORT

Internation No PCT/IB 03/05145

A. CLASS	ification of subject matter H01J31/12 H01J29/46 H01J29/	48							
According to international Patent Classification (IPC) or to both national classification and IPC									
B. FIELDS	SEARCHED								
Minimum documentation searched (classification system followed by classification symbols)  IPC 7 H01J									
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched									
Electronic o	data base consulted during the international search (name of data be	ase and, where practical, search terms used	l)						
EPO-Internal, PAJ, WPI Data, INSPEC, COMPENDEX									
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT								
Category °	Citation of document, with indication, where appropriate, of the re	levant passages	Relevant to claim No.						
Υ	US 6 420 726 B2 (CHOI YONG-SOO 16 July 2002 (2002-07-16) the whole document column 3, line 66 -column 7, line column 4, line 25-60 column 6, line 14 -column 7, line figures 2,4A-4D column 2, line 1-17	e 4	1-15						
Υ .	US 5 729 244 A (LOCKWOOD HARRY F 17 March 1998 (1998-03-17) the whole document abstract; figures 2,7 column 1, line 10-27 column 1, line 51 -column 2, line	1–15							
	•	-/							
	·								
X Furth	ner documents are listed in the continuation of box C.	χ Patent family members are listed	in annex.						
*Special categories of cited documents:  *T* later document published after the international filling date or priority date and not in conflict with the application but									
considered to be of particular relevance cited to understand the principle or theory underlying the invention considered to be of particular relevance in the c									
filing date  1. document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  2. document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  4. document be considered to involve an inventive step when the cannot be considered to involve an inventive step when the									
"O' document reterring to an oral disclosure, use, exhibition or document is combined with one or more other such document published prior to the international filing date but in the art.									
Date of the	family .								
Date of the actual completion of the international search  Date of mailing of the international search report  22 March 2004  31/03/2004									
Name and n	nailing address of the ISA	Authorized officer							
	European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,								
	Fax: (+31-70) 340-3016	Meyer, J							

Form PCT/ISA/210 (second sheet) (July 1992)

## INTERNATIONAL SEARCH REPORT

Internatik Application No
PCT/18 03/05145

		FC1/18 U3/U5145
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	Relevant to claim No.
Category °	Citation of document, with Indication, where appropriate, of the relevant passages	neevani to ciaim ivo.
Y	WO 02 097845 A (VAN DER POEL WILLIBRORDUS A J ; VAN GORKOM GERARDUS G P (NL); KONIN) 5 December 2002 (2002-12-05) page 2, line 20-32; figure 1	3
Y	US 5 729 087 A (CHIEN HO-CHING) 17 March 1998 (1998-03-17) the whole document column 4, line 32 -column 5, line 6; figure 5A	5-9,11, 12
Y	US 6 417 627 B1 (DERRAA AMMAR) 9 July 2002 (2002-07-09) column 1, line 61 -column 2, line 4 column 2, line 45-51 column 4, line 12-29	7-9,11, 12
Y	US 5 651 898 A (IMURA HIRONORI) 29 July 1997 (1997-07-29) the whole document abstract; figures 2,3 column 3, line 22-39	14
Y	US 5 612 712 A (KUMAR NALIN ET AL) 18 March 1997 (1997-03-18) the whole document column 3, line 62 -column 4, line 23 column 13, line 15-44; claims 2,4,6,8; figure 12	15
P,A	WO 03 054901 A (PHILIPS CORP INTELLECTUAL PTY; SCHIEBEL ULRICH (NL); BACHMANN PETE) 3 July 2003 (2003-07-03) abstract; figure 1	1
P,A 	WO 03 041039 A (BECHTEL HANS-HELMUT; HOLTSLAG ANTONIUS H M (NL); BALLER THEUNIS S) 15 May 2003 (2003-05-15) abstract; figures 4-6	1

## INTERNATIONAL SEARCH REPORT

ir stion on patent family members

PCT/IB 03/05145

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 6420726	B2	05-07-2001	KR EP JP US	2001058675 1113478 2001210223 2001006232	A1 A	06-07-2001 04-07-2001 03-08-2001 05-07-2001
US 5729244	A	17-03-1998	WO US	9948121 6522061		23-09-1999 18-02-2003
WO 02097845	Α	05-12-2002	WO WO	02097844 02097845		05-12-2002 05-12-2002
US 5729087	A	17-03-1998	US	5578225	A	26-11-1996
US 6417627	B1	09-07-2002	NONE			
US 5651898	A	29-07-1997	JP JP US	2576760 6349402 5493173	A	29-01-1997 22-12-1994 20-02-1996
US 5612712	A	18-03-1997	US AU CA DE DE EP US US US US US US US US US US US US US	5449970 5740294 2152471 69331749 69331749 0676083 8506686 9415350 5551903 5543684 5763997 5679043 5548185 6629869 5600200 5686791 5675216 5659224 5703435 6573643 6127773	A A1 D1 T2 A1 T A1 A A A A B1 A A A B1	12-09-1995 19-07-1994 07-07-1994 25-04-2002 22-08-2002 11-10-1995 16-07-1996 07-07-1994 03-09-1996 06-08-1996 09-06-1998 21-10-1997 20-08-1996 07-10-2003 04-02-1997 11-11-1997 07-10-1997 19-08-1997 30-12-1997 03-06-2003 03-10-2000
WO 03054901	Α	03-07-2003	WO	03054901	A2	03-07-2003
WO 03041039	Α	15-05-2003	WO	03041039	A2	15-05-2003